

CLAIM LISTING AND STATUS

1. (Currently Amended) A semiconductor laser, comprising:

a substrate;

an epitaxial structure deposited on said substrate;

a V-shaped semiconductor laser cavity formed in said epitaxial structure, said cavity having first and second legs, an optical axis parallel to said substrate at least one segment and at least one output;

at least one etched gap extending through one of said legs and separating said one of said legs said at least one segment and separating said segment into first and second spaced apart sections of said laser cavity, said etched gap having two parallel etched facets that are perpendicular to said optical axis at said etched gap; and

at least one distributed Bragg reflector (DBR) etched in said epitaxial structure at said at least one output.

2. (Withdrawn) The laser of claim 1, wherein the total length of said laser cavity is between about 10 μm and about 10,000 μm .

3. (Currently amended) The laser of claim 1, wherein said at least one of said legs through which said etched gap extends laser cavity segment includes an active region through which said and said etched gap comprises spaced-apart etched facets of said etched gap extend

extending through said active region, and wherein said gap has a length of between about 0.001 μm and about 10 μm .

4. (Currently amended) The laser of claim 1, further including at least one photonic device coupled to said [an] output of said laser cavity.

5-13. (Cancelled)

14. (Currently amended) The semiconductor laser photonic device of claim 1 [13], wherein an said etched exit facet at or near the Brewster angle is at an end of said first leg of said V-shaped cavity structure.

15. (Currently amended) The semiconductor laser photonic device of claim 14, wherein said first and second legs are joined at corresponding ends at a joint to form said V-shaped cavity structure, and wherein said etched exit facet is positioned at the joint of said first and second legs.

16. (Currently amended) The semiconductor laser photonic device of claim 15, wherein an said entrance facet is at a free end of said second leg of said V-shaped cavity structure.

17-24. (Cancelled)

25. (Currently Amended) A semiconductor device, comprising:

a substrate;

an epitaxial structure deposited on said substrate;

a semiconductor waveguide cavity formed in said epitaxial structure, said cavity having at least first and second legs joined at an output facet and an optical axis parallel to said substrate;

an etched gap extending through at least one of said legs and separating said one of said legs said semiconductor waveguide cavity and separating said cavity into first and second spaced apart sections, said etched gap comprising a pair of parallel etched facets that are perpendicular to said optical cavity and are spaced apart by a length of between about 0.001 μm and 10 μm .

26. (Currently amended) The device of claim 25, further including multiple etched gaps spaced along said legs of said waveguide cavity.

27. (Cancelled)

28. (Currently amended) The device of claim 26, wherein said semiconductor waveguide cavity incorporates a plurality of said multiple legs coupled to form a ring laser.

29. (Currently amended) The device of claim 28, said ring laser further including an exit facet coupled to an input facet of a photonic device having an input facet coupled to said output facet of said cavity.

30. (Withdrawn) The device of claim 29, wherein said photonic device is a V-shaped waveguide structure having an etched facet at or near the Brewster angle at a distal end.

31. (Currently Amended) A semiconductor laser, comprising:
a substrate;
an epitaxial structure deposited on said substrate;
a semiconductor laser cavity formed in said epitaxial structure and having a plurality of legs multiple segments joined end-to-end to an etched facet to provide a laser output; and

at least one etched gap extending through at least one of said legs segments and forming first and second spaced apart sections of said laser cavity, said cavity having an optical axis parallel to said substrate, said etched gap having two parallel facets which are perpendicular to said optical axis at said etched gap.

32. (Previously Presented) The laser of claim 31, further including a DBR located externally of said laser cavity and adjacent said output etched facet.

33. (Currently amended) The laser of claim 31, wherein the laser cavity includes three of said legs segments joined end-to-end to form a triangular ring laser, and includes at least one etched gap in at least one of said segments to enhance unidirectionality in said laser.

34. (Withdrawn) The laser of claim 33, further including a photonic device coupled to said output, said photonic device including a facet at the Brewster angle to minimize back-reflection into said laser cavity.

35. (Currently amended) The laser of claim 31, including at least a second one-etched gap extending through a second of said legs each of at least two of said segments.

36-47. (Cancelled)